Amendments to the Claims:

This listing of claims replaces all prior versions, and listings, of claims in the application:

Listing of Claims:

1-29. (Cancelled)

30. (Currently Amended) A method of rejection of noise and interference from a received combination signal by estimation of a desired signal having in addition to noise and interference been distorted by a communication channel through which the desired signal has been passed, comprising the following steps:

a) receiving a signal as a combination of ~~noise, interference~~ noise and interference components and the distorted desired signal through one or more antennas;

b) separating the received signal into a real part and an imaginary part;

c) modeling the noise and interference component as a filtered process using a model for colored noise;

d) forming an equation for the received signal as a function of the desired signal distorted by the communication channel and the noise and interference components by utilizing the real and imaginary parts and the noise and interference components obtained in steps b) and c);

e) selecting of values for filter parameters in said equation; and

f) estimating the desired signal by calculation from said equation by means of said filter parameters;

wherein the distortion caused by the communication channel is taken into consideration by modeling the channel as a linear filter coefficient in said equation;

wherein said filter parameters and the channel coefficient are calculated by means of a known training sequence from the equation formed in step d) by knowledge of the data sent by the signal in said training sequence and by knowledge of the statistical properties of the noise component, whereafter the desired signal is estimated mathematically by means of an equalization process;

wherein in a mathematical algorithm for calculating the filter parameters and the channel coefficient, the number of the filter parameters is selected by an order estimation procedure; and

wherein an adaptive order estimation procedure is used to choose an order of [[a]] the filter process.

31. (Currently Amended) A method of rejection of noise and interference from a received combination signal by estimation of a desired signal having in addition to noise and interference been distorted by a communication channel through which the desired signal has been passed, comprising the following steps:

a) receiving a signal as a combination of ~~noise, interference~~ noise and interference components and the distorted desired signal through one or more antennas;

b) separating the received signal into a real part and an imaginary part;

c) modeling the noise and interference component as a filtered process using a model for colored noise;

d) forming an equation for the received signal as a function of the desired signal distorted by the communication channel and the noise and interference components by utilizing the real and imaginary parts and ~~noise and interference components~~ the noise and interference components obtained in steps b) and c);

e) selecting of values for filter parameters in said equation; and

f) estimating the desired signal by calculation from said equation by means of said filter parameters;

wherein the distortion caused by the communication channel is taken into consideration by modeling the channel as a linear filter coefficient in said equation;

wherein said filter parameters and the channel coefficient are calculated by means of a known training sequence from the equation formed in step d) by knowledge of the data sent by the signal in said training sequence and by knowledge of the statistical properties of the noise component, whereafter the desired signal is estimated mathematically by means of an equalization process;

wherein in a mathematical algorithm for calculating the filter parameters and the channel coefficient, the number of the filter parameters is selected by an order estimation procedure; and

wherein a suboptimal method is used for estimation of the desired signal.

32. (Currently Amended) The method of claim 30, wherein [[in]] said adaptive order estimation procedure ~~the adaptive order is estimated by~~ comprises using a threshold test on a residual estimation error.

33. (Currently Amended) The method of claim 30, ~~wherein~~ further comprising the steps of using estimated models of different orders ~~are used~~ to equalize a number of symbols and determine a corresponding metric and using said metric to select said order of the filter process.

34. (Currently Amended) The method of claim 32, wherein the adaptive order estimation procedure ~~used is~~ comprises a recursive implementation of an identification algorithm.

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